to CPU module **2099** (FIG. **33**), except for the addition of video controller **2301**. Onboard video controller **2301** is bus connected by line **2263** to a state translator **2266**. In this embodiment of the invention, the state translator is configured to transmit and receive video signals and commands over bus **2255** via connector **231** as well as other functions as described above.

Other Aspects and Features

The embodiments of the present invention described above specifically address notebook-type and palmtop-type computers. The embodiment described below addresses yet another aspect of the palmtop type computers.

FIG. **48** is an isometric drawing of another embodiment of the present invention. Computer **2400** comprises an attached pivotable display case **2401** and a fixed keyboard **2403**. The display case rotates about a hinge **2405** and closes in a fixed detented position above the keyboard. Display case **2401** comprises a flat-panel display **2407**. There are two PCMCIA-type module bays **2412A** and **2412B** on one side of the case, and two more (not shown) on the side opposite. The four PCMCIA module bays are arranged in a planar array as described above. A frame **2415** contains a bus structure (not shown) that interconnects all aspects of the PCMCIA type module bays to computer **2400** as described above. In this embodiment of the present invention, a standard keyboard controller (not shown) enclosed in frame **2415** connects keyboard **2403** to the internal bus structure.

It will be evident to one with skill in the art that there are many changes that might be made without departing from the spirit and scope of the invention. Many of these alternatives have been described above. For example, there may be more than the four module bays described, or fewer. There may also be more than one planar array of module bays. To provide more docking bays in a compact arrangement, one might privide two or more planar levels, with multiple docking bays in each plane. Similarly, there are many ways modules may be built to be docked in a framework such as computer **2011**, **2221** and **2400** to form a planar array. There are similarly many different kinds of connectors that might be utilized as well as many kinds of compressed buses that can be used. There are many kinds of modules that may be provided, and many other changes that might be made within the spirit and scope of the invention.

It will be apparent to one with the skill in the art that there are many changes that might be made and many other combinations that might be made without departing from the spirit and scope of the invention. There are, for example, many ways to implement the support structure of the µPDA, and to interconnect the active components. One way has been illustrated by FIG. **2** and described in accompanying text. There are many alternatives to this preferred structure. There is also a broad range of sizes and form factors that might be assumed by devices according to the present invention. The use of well-known PCMCIA form factors has been disclosed, but other sizes and forms might also be provided in alternative embodiments. In larger embodiments, on-board peripherals may be implemented.

In addition to these alternatives, there are various ways the connectivity of a µPDA bus might be provided. The well-known PCMCIA standard has been disclosed as a preference, but other connectivity may also be used in alternative embodiments. Memory types and sizes may vary. Means of providing a security code may vary. The nature of the internal bus may vary. There are indeed many variations that do not depart from the spirit and scope of the invention.

What is claimed is:

1. A digital assistant, comprising:

an enclosure for enclosing and supporting internal elements;

a local CPU within the enclosure for managing functions of the digital assistant;

a local memory connected to the local CPU by a bus the local memory for storing data and executable routines;

a power supply within the enclosure for supplying power to power-using elements of the digital assistant;

a flat-panel display operable by the local CPU and implemented on a surface of the enclosure;

input apparatus connected to the local CPU for providing commands and data to the digital assistant; and

a host interface comprising a host interface bus connected to the local CPU and to a first portion of a host interface connector at a surface of the enclosure, the host interface configured to directly connect the local CPU to a compatible bus structure of a host computer having a host CPU and a host memory, the host interface bus including address lines, data lines, and control signal lines, the control signal lines including read/write control signals and at least one memory control signal;

wherein the flat-panel display comprises a matrix of elongated electroluminescent cells substantially orthogonal to the plane of the flat-panel display, with individual cells having excitation electrodes along opposite elongated edges of the cells providing excitation voltage parallel to the plane of the flat-panel display.

2. A digital assistant as in claim 1 additionally comprising an expansion bus interface comprising an expansion bus connected to the local CPU and to a first portion of an expansion bus connector implemented on a surface of the enclosure.

3. A digital assistant as in claim 1 additionally comprising a nonvolatile storage device connected to the local CPU and containing a code unique to the digital assistant, for uniquely identifying the digital assistant to connecting digital devices.

4. A digital assistant as in claim 3 wherein the nonvolatile storage device is an EEPROM device.

5. A digital assistant as in claim 1 wherein the power supply comprises a user-accessible well having electrical connections for a storage battery.

6. A digital assistant as in claim 1 wherein the power supply comprises a solar energy conversion panel having electrical connections for attaching to and recharging a storage battery.

7. A digital assistant as in claim 1 wherein the input apparatus comprises a pointer device for providing positional and directional input for control operations performed in conjunction with the flat-panel display.

8. A digital assistant as in claim 7 wherein the pointer device comprises a thumbwheel implemented at one corner of the enclosure.

9. A digital assistant as in claim 7 wherein the pointer device comprises a four-way pressure-sensitive region on a surface of the enclosure.

10. A digital assistant as in claim 1 wherein the memory comprises a ROM portion for storage of executable routine and a RAM portion for storage of data.

11. A digital assistant as in claim 1 wherein, upon connecting to the compatible bus structure of the host computer,